FIG. 1

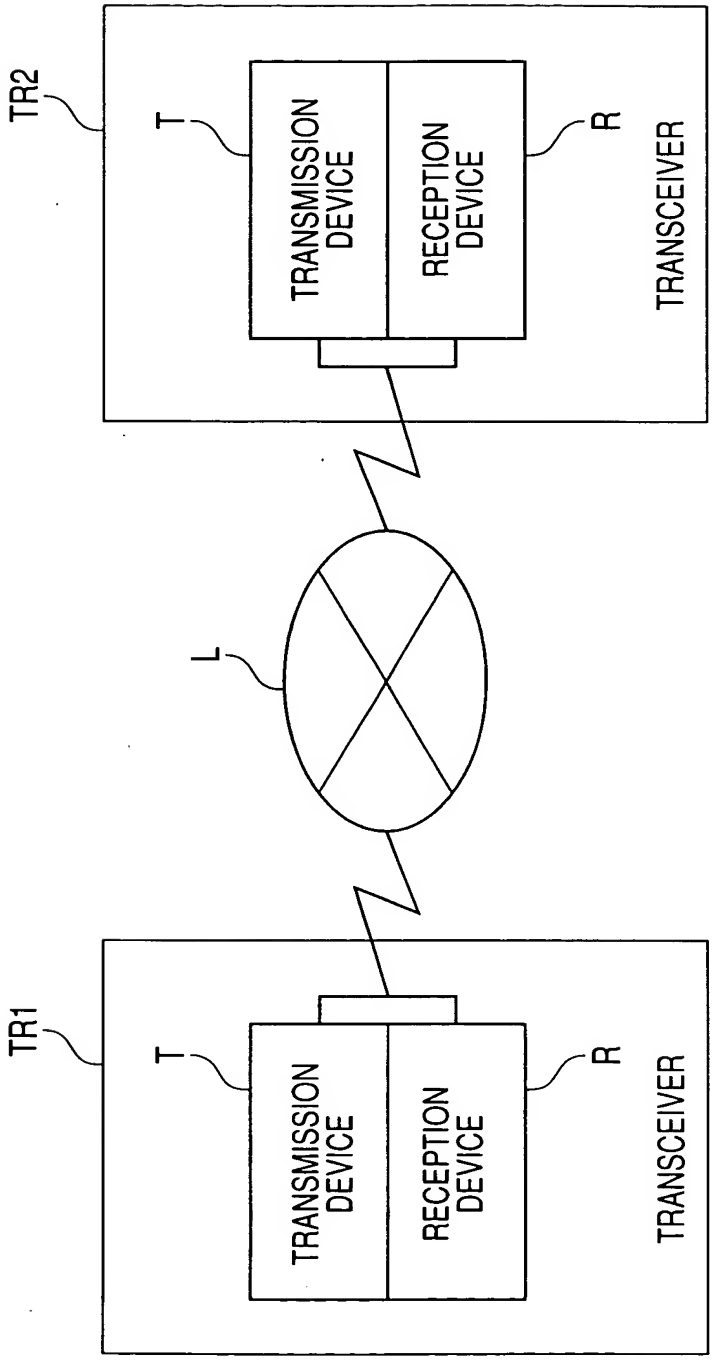

TR2
T
TRANSMISSION DEVICE
RECEPTION DEVICE
R
TRANSCEIVER
L
TR1
T
TRANSMISSION DEVICE
RECEPTION DEVICE
R
TRANSCEIVER

FIG. 2

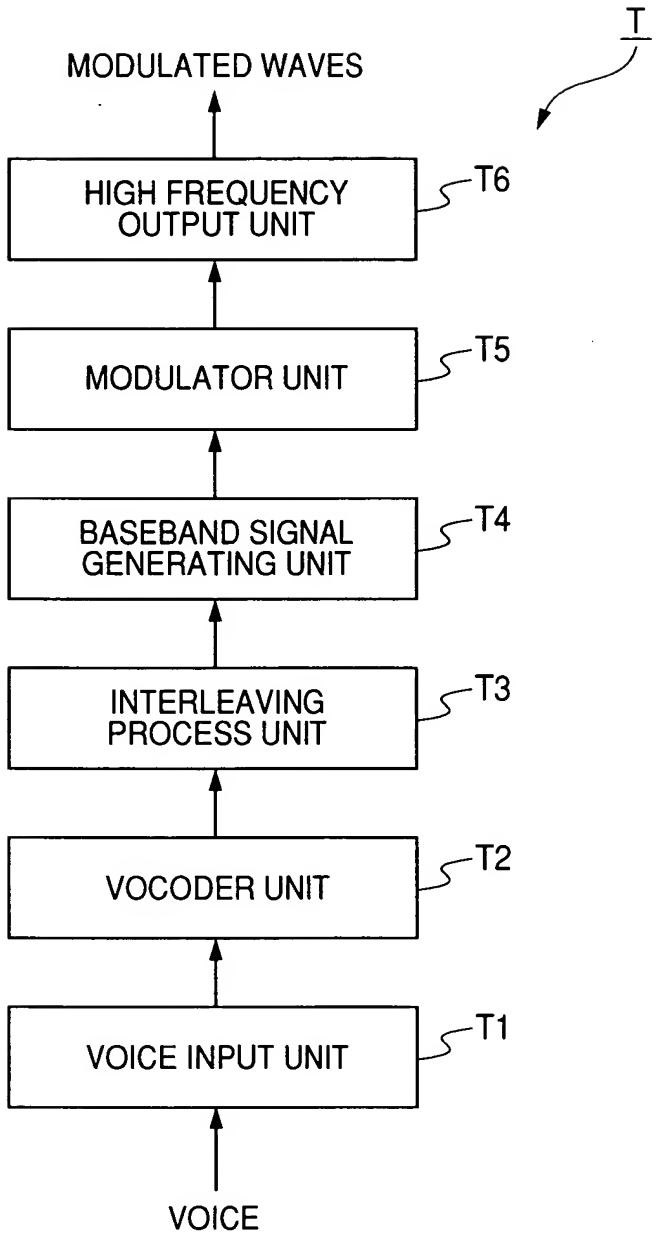

T
MODULATED WAVES
HIGH FREQUENCY OUTPUT UNIT
T6
MODULATOR UNIT
T5
BASEBAND SIGNAL GENERATING UNIT
T4
INTERLEAVING PROCESS UNIT
T3
VOCODER UNIT
T2
VOICE INPUT UNIT
T1
VOICE

FIG. 3

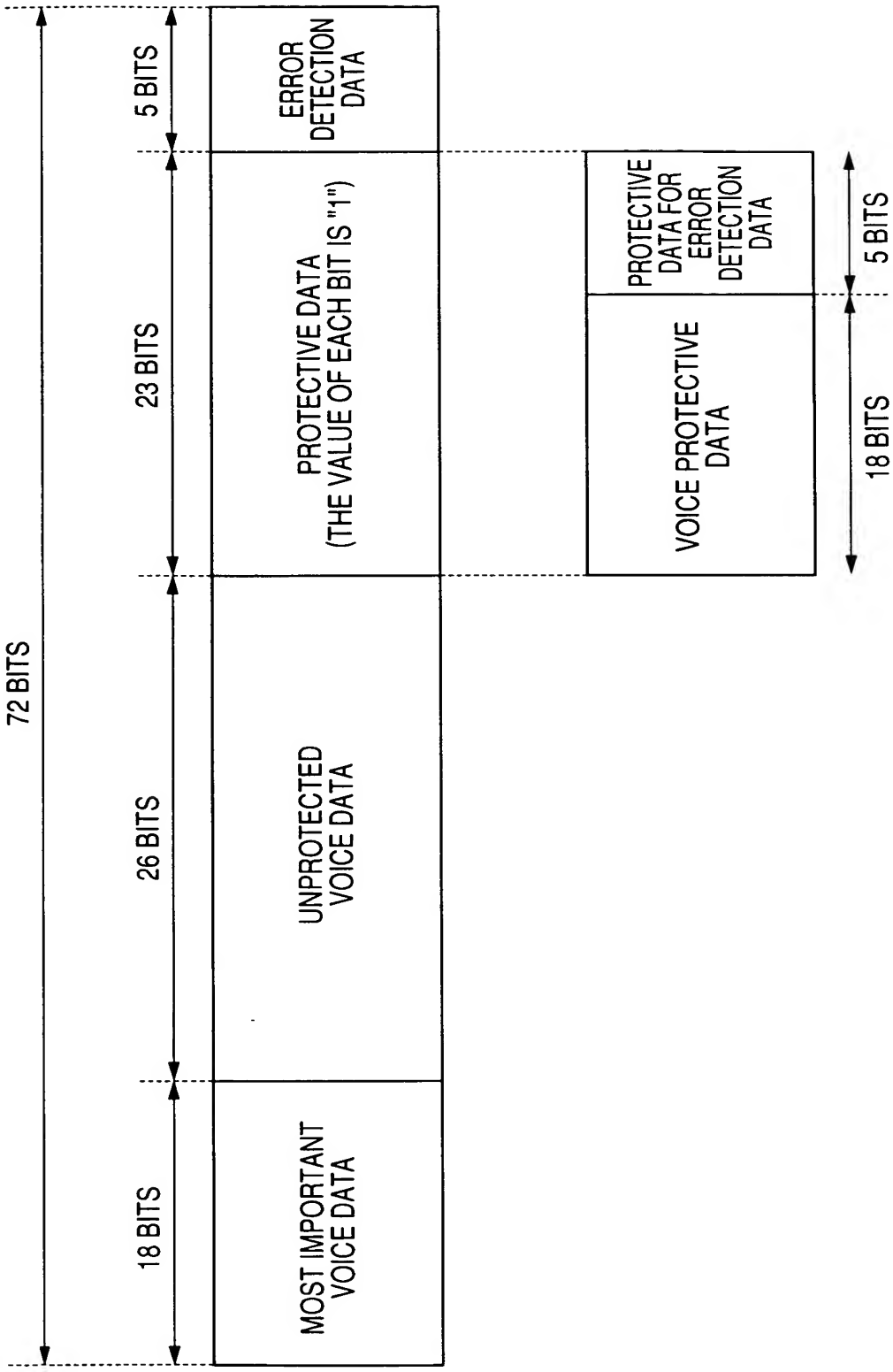

72 BITS
18 BITS
MOST IMPORTANT VOICE DATA
26 BITS
UNPROTECTED VOICE DATA
23 BITS
PROTECTIVE DATA (THE VALUE OF EACH BIT IS "1")
5 BITS
ERROR DETECTION DATA
18 BITS
VOICE PROTECTIVE DATA
5 BITS
PROTECTIVE DATA FOR ERROR DETECTION DATA

FIG. 4

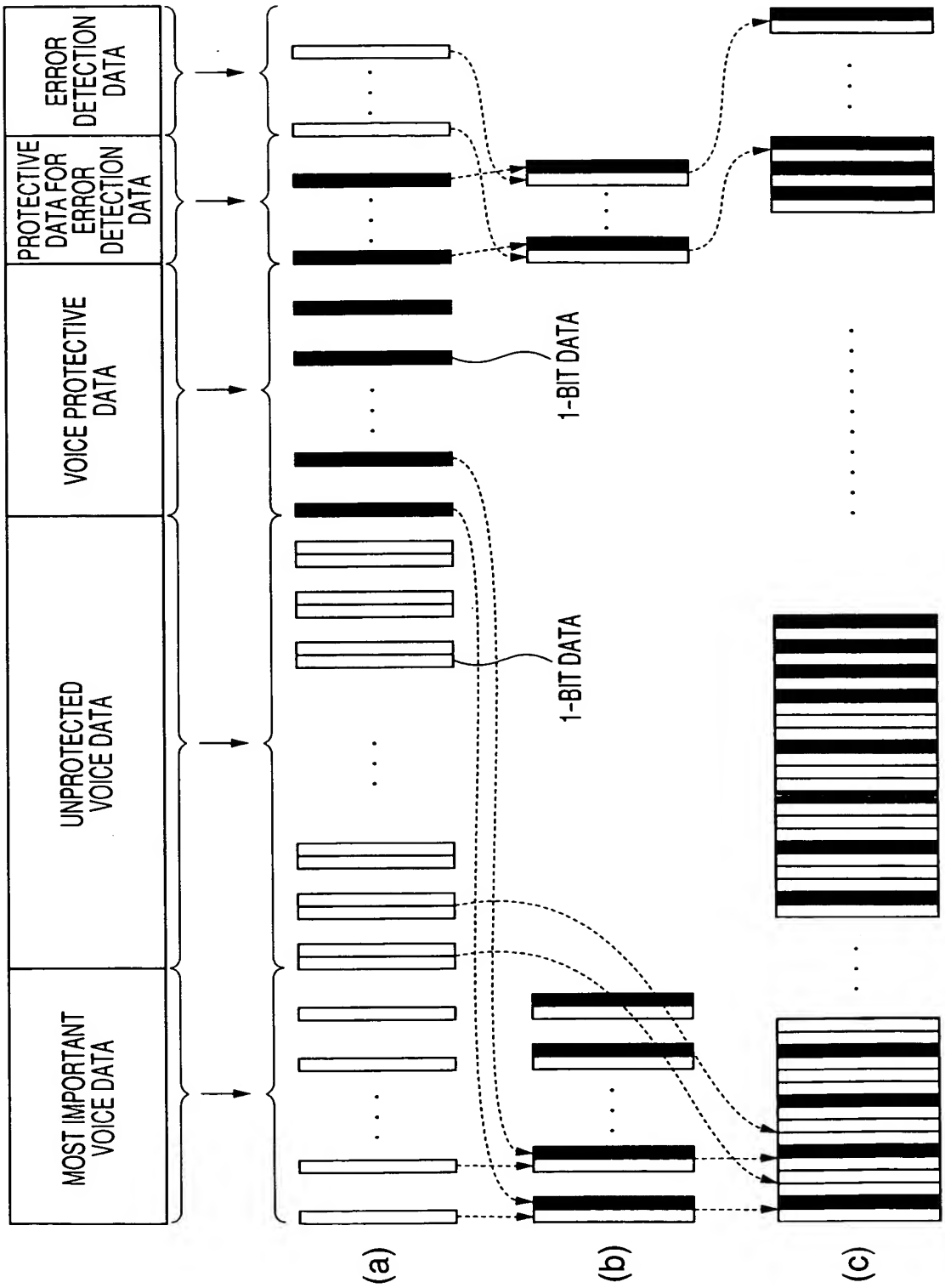

MOST IMPORTANT VOICE DATA
UNPROTECTED VOICE DATA
VOICE PROTECTIVE DATA
PROTECTIVE DATA FOR ERROR DETECTION DATA
ERROR DETECTION DATA
1-BIT DATA
1-BIT DATA
(a)
(b)
(c)

FIG. 5

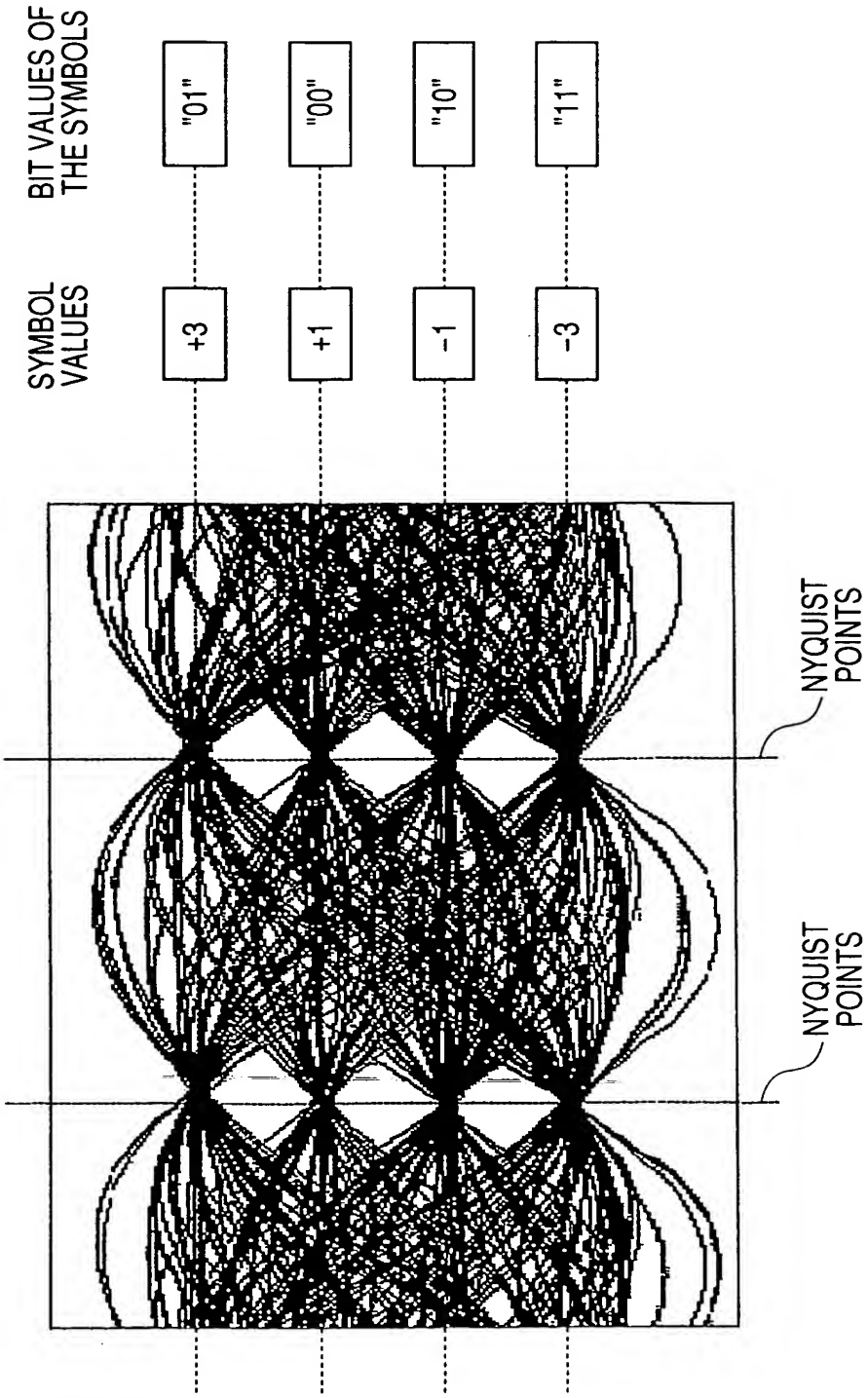

BIT VALUES OF THE SYMBOLS
SYMBOL VALUES
"01"
"00"
"10"
"11"
+3
+1
-1
-3
NYQUIST POINTS
NYQUIST POINTS

FIG. 6

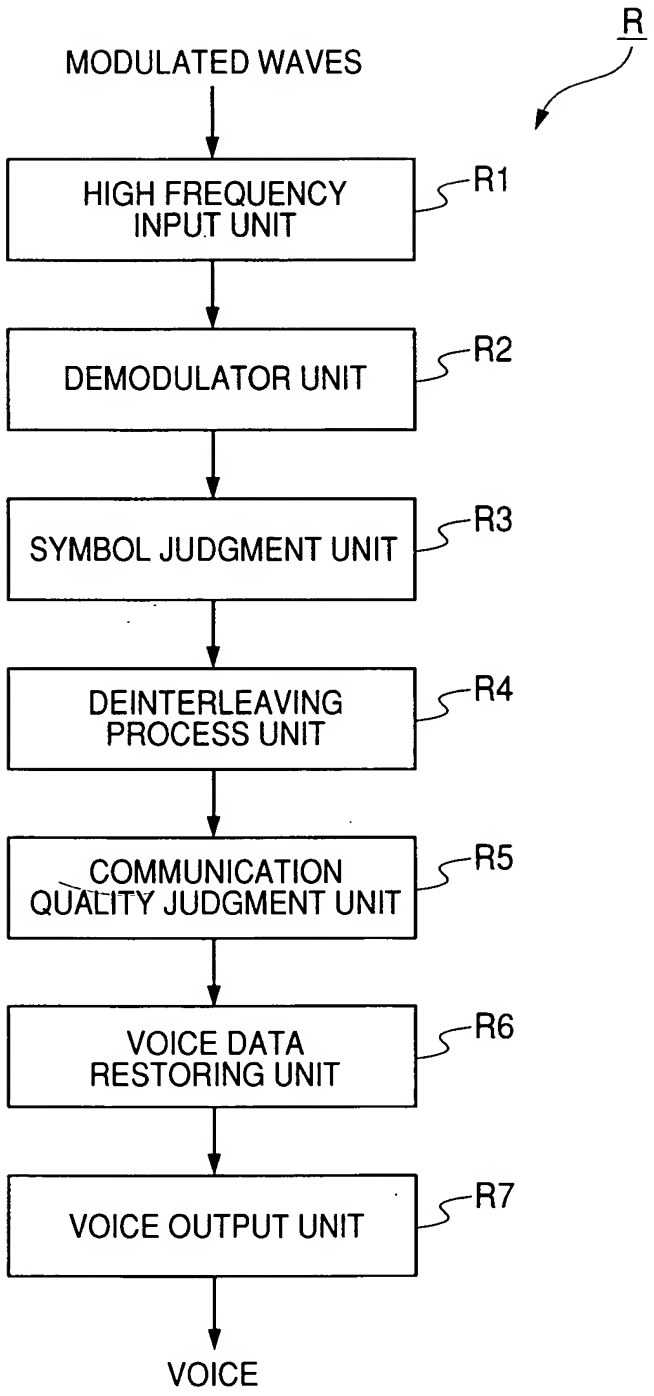

R
MODULATED WAVES
HIGH FREQUENCY INPUT UNIT
R1
DEMODULATOR UNIT
R2
SYMBOL JUDGMENT UNIT
R3
DEINTERLEAVING PROCESS UNIT
R4
COMMUNICATION QUALITY JUDGMENT UNIT
R5
VOICE DATA RESTORING UNIT
R6
VOICE OUTPUT UNIT
R7
VOICE

FIG. 7

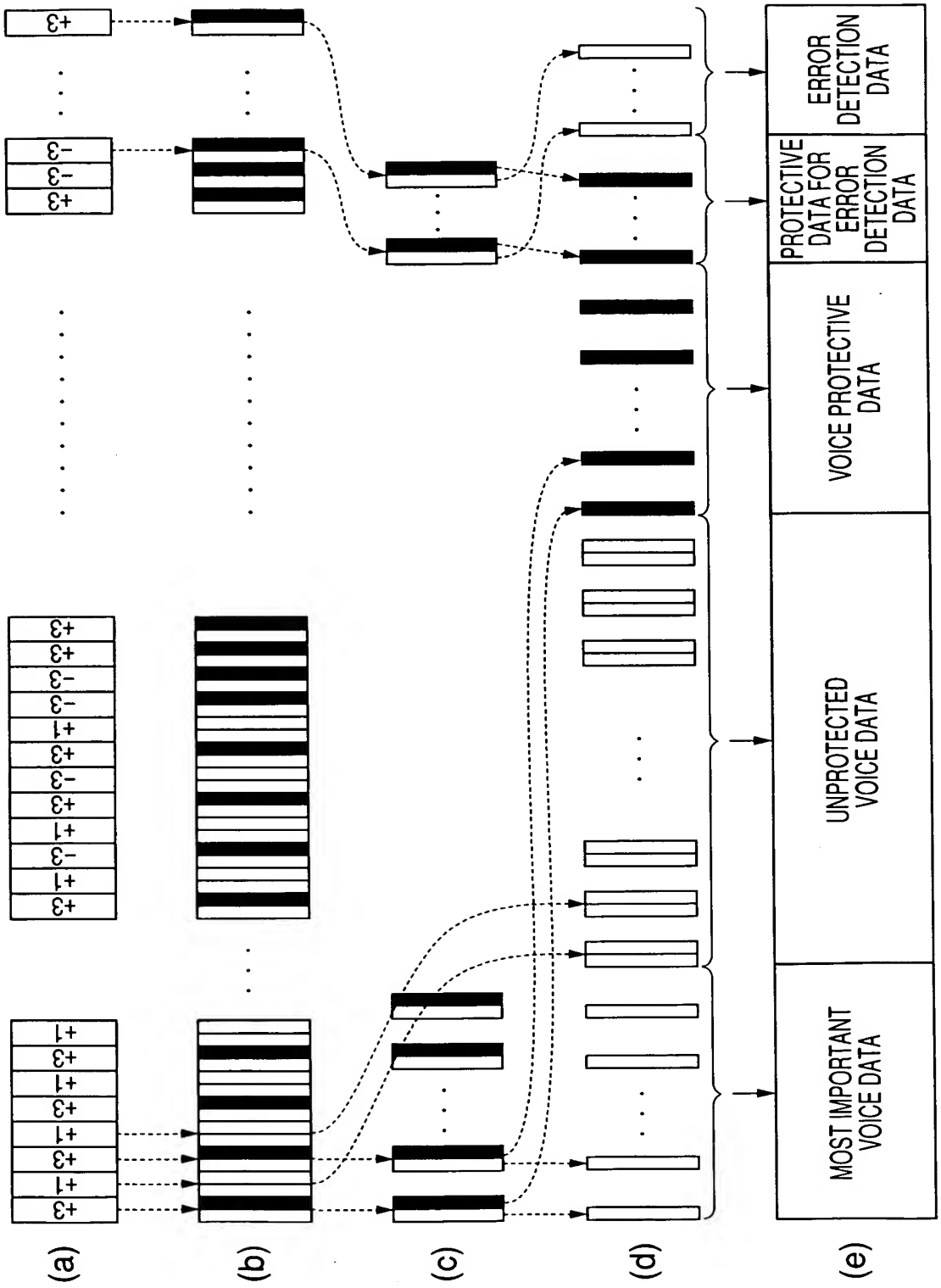
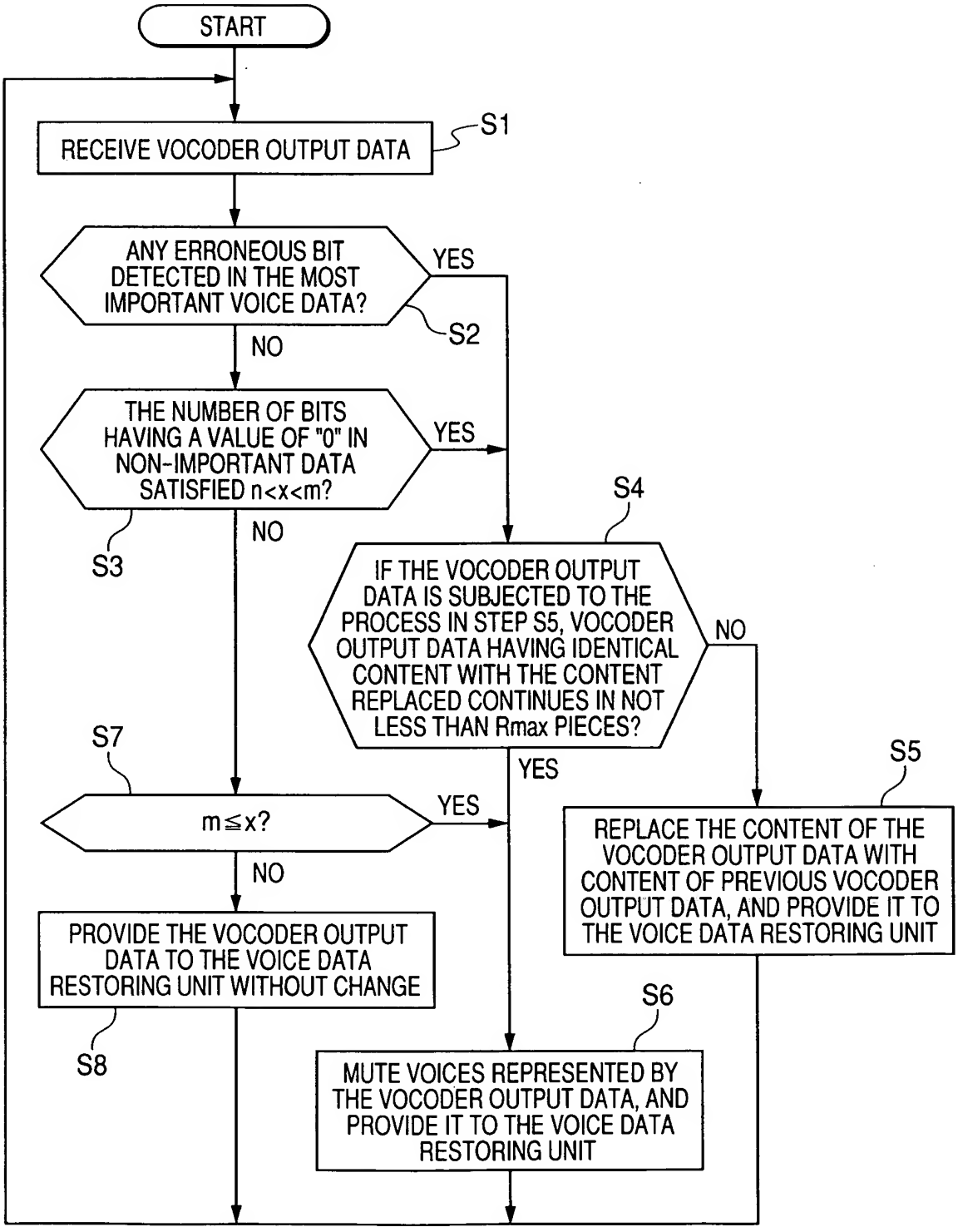

(a)
(b)
(c)
(d)
(e)
MOST IMPORTANT VOICE DATA
UNPROTECTED VOICE DATA
VOICE PROTECTIVE DATA
PROTECTIVE DATA FOR ERROR DETECTION DATA
ERROR DETECTION DATA

FIG. 8


START
RECEIVE VOCODER OUTPUT DATA
S1
ANY ERRONEOUS BIT DETECTED IN THE MOST IMPORTANT VOICE DATA?
YES
S2
NO
THE NUMBER OF BITS HAVING A VALUE OF "0" IN NON-IMPORTANT DATA SATISFIED n<x<m?
YES
S3
NO
S4
IF THE VOCODER OUTPUT DATA IS SUBJECTED TO THE PROCESS IN STEP S5, VOCODER OUTPUT DATA HAVING IDENTICAL CONTENT WITH THE CONTENT REPLACED CONTINUES IN NOT LESS THAN Rmax PIECES?
NO
YES
S5
REPLACE THE CONTENT OF THE VOCODER OUTPUT DATA WITH CONTENT OF PREVIOUS VOCODER OUTPUT DATA, AND PROVIDE IT TO THE VOICE DATA RESTORING UNIT
S7
m≦x?
YES
NO
PROVIDE THE VOCODER OUTPUT DATA TO THE VOICE DATA RESTORING UNIT WITHOUT CHANGE
S8
S6
MUTE VOICES REPRESENTED BY THE VOCODER OUTPUT DATA, AND PROVIDE IT TO THE VOICE DATA RESTORING UNIT